DRAFT

DENVER METRO AREA/NORTH FRONT RANGE NONATTAINMENT AREA 2011 EMISSION INVENTORY

Colorado Department of Public Health and Environment

DRAFT

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Colorado Department of Public Health and Environment
Air Pollution Control Division
4300 Cherry Creek Drive South
Denver, Colorado 80246

1. Emission Inventory – Methodology

The emissions inventory was developed for a typical July day for the year 2011 for the ozone precursors of carbon monoxide (CO), oxides of nitrogen (NOx), and volatile organic compounds (VOC) emitted in the ozone nonattainment area. The Environmental Protection Agency's MOVES2010b emissions model was used with transportation information from the two metropolitan planning organizations (Denver Regional Council of Governments or DRCOG and North Front Range Transportation and Air Quality Planning Council or NFR) serving the Denver/North Front Range nonattainment area, for highway vehicle emissions. Area sources were calculated using a combination of EPA's non-road model data, 2010 Census data updated to 2011, area source data from the 2011 Environmental Protection Agency (EPA) National Emissions Inventory (NEI), and point sources were calculated from the 2011 stationary sources emissions information. Fire emissions are excluded.

The Motor Vehicle Emissions Simulator (MOVES) model and non-road model inputs represent these average July conditions. Residential fuel combustion is excluded because emissions from this category are negligible in the summer. Other source categories were apportioned from annual to daily by dividing by 365. Highway mobile source emission factors are from the EPA MOVES model, an emission factor model for predicting gram per mile emissions of Hydrocarbons (HC), Carbon Monoxide (CO), Nitrogen Oxides (NOx), Carbon Dioxide (CO2), Particulate Matter (PM), and toxics from cars, trucks, and motorcycles under various conditions. Non-road source emissions are from the EPA Non-Road Model. This model includes the impact of future controls on non-road engines, which is used in equipment such as lawn and garden equipment and construction equipment. Oil and gas equipment emissions from the Non Road Model have been excluded to avoid double counting with the Oil and Gas Point and Area inventories. Area source emissions (including, construction, commercial cooking, etc.) and biogenic emissions are from the 2011 EPA NEI. For more documentation for these categories, refer to the NEI documentation (EPA, 2014).

The NEI and Non-Road Model report emissions for The Nine Nonattainment Counties as a whole. Emissions were apportioned to the Nonattainment Area using geographical information system (GIS) techniques, using population, vehicle miles traveled (VMT) and land area. Railroad emissions were apportioned to the Nonattainment Area by miles of track. The MOVES Model was run using DRCOG's Travel Demand Model (TDM) for 2010 and the NFR TDM for 2009, and the outputs from these Models were clipped using GIS to the Nonattainment Area. The VMT from the two TDMs were compared to 2011 VMT from the Colorado Department of Transportation (CDOT) Highway Performance System (HPMS) data for 2011 (VMT for the entire nine counties that are in whole or in part in the Nonattainment Area), and was found to be so close that no adjustment is required.

REGION	VMT per day
DENVER/NORTH FR (CDOT 2011)	83,896,117
NFR 2009 sub portion	11,264,479
DRCOG 2010 sub portion	72,498,242
TOTAL TDM VMT	**83,762,721**

The NOx and VOC emission factors from MOVEs were calculated on an hourly basis for six vehicle types and multiplied hour by hour by the link VMT from the TDMs. Hourly vehicle mix data for the six vehicle types was determined from CDOT 2011 long term and 2012 short term Automated Traffic Recorder (ATR) data. The off-network emission factors from the MOVES model include stage 2 refueling of vehicles, which was excluded from the point source inventory. The off-net emission factors are used with the vehicle population calculated from 2011 registration data. The NFR area was modeled without I/M, and the DRCOG area (except Weld County) was modeled with I/M.

Oil and Gas (O&G) Area source emissions are from the 3-State Study/ENVIRON 2011 update for oil and gas area sources in Colorado. Non-Condensate Tank VOC (O&G) Point Source emissions and (O&G) Point Source NOx emissions were calculated from the APCD Air Pollutant Emission Notice database for 2011.

The calculation of emissions from condensate tanks in the Ozone nonattainment area as an area source is as follows:

Controlled emissions = oil production in barrels (bbls) x EF (pounds/bbl)/2000(pounds/ton) x (1- (control efficiency (95%) x **rule penetration** (92.56%) x rule effectiveness (80%) x capture efficiency (75%)))

Or controlled emissions = oil production (bbls) x 13.7(pounds/bbl)/2000(pounds/ton) x 0.472418

Tank flaring emissions (CO and NOx): APEN emissions were used for all sources inside the nonattainment area.

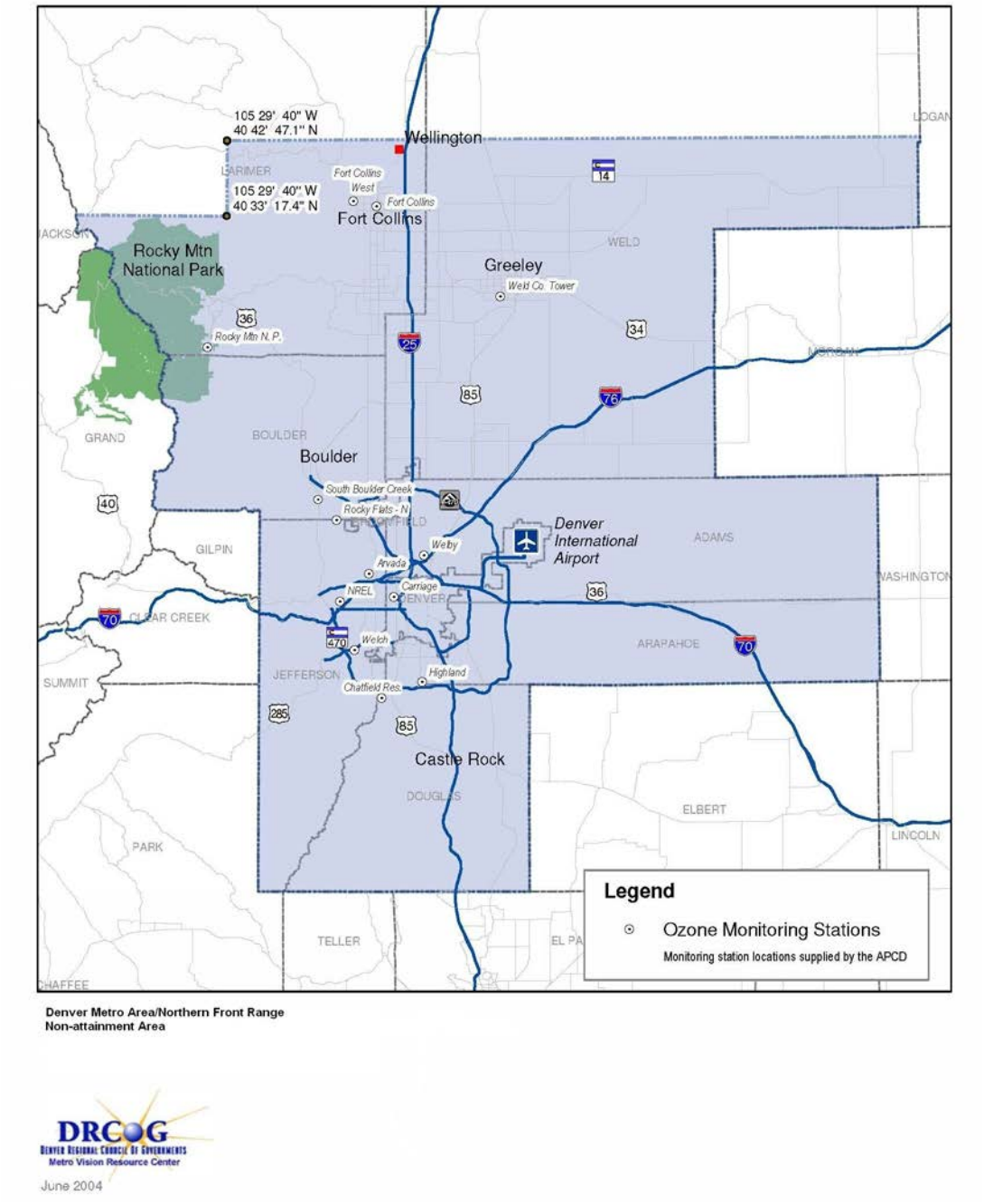
Rule Penetration:

Rule Penetration is the percentage calculated by dividing the uncontrolled emissions that are required to be controlled by the regulation, by the total emissions from all emitting units. Because the APEN database does not include all tanks, the percentage of emissions is calculated from the oil production by wells multiplied by an emission factor. The rule penetration was calculated using all producing wells in 2011 in Weld County. A database of production by API number (well number) was developed from COGCC data in January of 2013. Total production in this database for Weld County was 26,425,019 barrels (bbls) of oil. Multiplying this production by the default emission factor for the DJ Basin (13.7 pounds per bbl) and dividing by 2000 results in emissions of 181,011 tons per year. Tanks with emission greater than or equal to two tons per year are required to be controlled in the nonattainment area. The sum of VOC

emissions of individual gas wells (from COGCC data) greater than two tons per year is 176,849 tons per year or 97.7004% of the total tank emissions. For the nonattainment area, Regulation Number 7 requires all subject storage tanks to achieve a 90% overall system-wide level of control of VOC emissions at an assumed control device efficiency of 95%. Multiplying the value 97.7004% by 90% divided by 95% results in an overall rule penetration of 92.5582%. Consequently, the rule penetration in the nonattainment area is 92.5582%.

DENVER METRO AREA/NORTH FRONT RANGE NONATTAINMENT AREA

The DMA/NFR 8-hour ozone nonattainment area was established in EPA's April 2004 designation of nonattainment areas: All of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson Counties and portions of Larimer and Weld Counties. A map describing the current nonattainment area boundaries is included in the Figure below.



2. Emission Inventory – Summary

This section presents the 2011 emission inventory.

Table 1: 2011 Ozone Emission Inventory (tons per day)

Source Category	CO	NOX	VOC
Area Sources			
Aircraft	18.20	8.13	1.74
Airport Ground Support	6.47	0.63	0.21
Commercial Cooking	1.40		0.49
Diesel Locomotives - Line Haul	1.35	9.20	0.46
Diesel Locomotives - Yard Engines	0.22	1.81	0.12
Cutback Asphalt			0.14
Emulsified Asphalt			0.04
Pesticide Application: Agricultural			1.79
Portable Fuel Containers			6.23
Solvent Utilization			38.25
Surface Coating			13.65
Tank Trucks In Transit			0.12
Area Sources Subtotal:	***27.64***	***19.77***	***63.24***
Non-Road Sources			
Lawn and Garden Equipment	534.27	9.93	35.24
Other Non-Road	208.04	50.46	20.23
Non-Road Sources Subtotal:	***742.31***	***60.39***	***55.47***
On-Road Mobile Sources			
Highway Vehicles	782.35	148.84	87.13
On-Road Sources Subtotal:	***782.35***	***148.84***	***87.13***
Point Sources			
Power Generation (SIC 4911)	3.65	39.72	0.68
Other Point	14.09	20.99	25.87
Point Sources Subtotal:	***17.74***	***60.71***	***26.55***
O&G Sources			
O&G Points (non-condensate)	17.02	18.06	14.80
O&G Area (non-condensate)	12.88	22.24	48.94
O&G Condensate Tanks	2.34	1.09	216.01
O&G Sources Subtotal	***32.24***	***41.39***	***279.75***
Biogenic Sources	**32.22**	**8.28**	**197.92**
GRAND TOTAL	**1,634.5**	**339.4**	**710.1**

Table 2: Major Sources - 2011 Ozone Emission Inventory (tons per day)

Major Sources Greater than 100 tons/year of NOx or VOC, or greater than 250 tons/year of CO

	Facility Name	Type	CO [tpy]	NOx [tpy]	VOC [tpy]
1	PUBLIC SERVICE CO CHEROKEE PLT	PowerPlant	508.4	8,995.9	64.0
2	PUBLIC SERVICE CO - VALMONT	PowerPlant	133.9	2,023.2	14.7
3	PUBLIC SERVICE CO - ARAPAHOE	PowerPlant	123.9	1,999.4	17.1
4	COLORADO-GOLDEN ENERGY CORPORATION	Other Point	81.9	1,160.6	10.5
5	SUNCOR ENERGY - DENVER REFINERY	Other Point	354.8	670.4	315.2
6	WGR ASSET HOLDING CO - WATTENBERG PLANT	O&G	134.1	763.3	156.6
7	KMCGEE FT LUPTON/PLATTE VALLEY/LANCASTER	O&G	319.6	551.8	276.6
8	CEMEX CONSTRUCTION MATERIALS - LYONS	Other Point	238.0	765.6	3.5
9	MILLERCOORS, LLC - GOLDEN BREWERY	Other Point	22.2	8.2	570.9
10	COLORADO INTERSTATE GAS CO WATKINS STA	O&G	120.6	459.6	44.6
11	KERR-MCGEE GATHERING - FREDERICK CS	O&G	177.6	276.2	207.9
12	DCP MIDSTREAM, LP - SPINDLE	O&G	357.2	335.0	129.3
13	PUBLIC SERVICE CO FORT SAINT VRAIN PLT	PowerPlant	114.1	425.3	32.6
14	DCP MIDSTREAM, LP - ROGGEN	O&G	294.5	252.2	184.4
15	COLORADO INTERSTATE GAS CO LATIGO C & S	O&G	65.9	326.1	90.7
16	ROCKY MOUNTAIN BOTTLE CO	Other Point	45.2	351.8	49.0
17	DCP MIDSTREAM, LP - PLATTEVILLE	O&G	247.0	244.9	134.4
18	KERR-MCGEE Hudson Station	O&G	116.3	259.3	96.2
19	DCP MIDSTREAM, LP - GREELEY	O&G	221.9	228.9	111.8
20	DCP MIDSTREAM, LP- MEWBOURN	O&G	168.1	153.4	155.7
21	ANHEUSER-BUSCH, LLC	Other Point	22.4	73.9	233.1
22	OWENS-BROCKWAY GLASS - TUMBLEWEED	Other Point	56.9	231.9	74.2
23	DCP MIDSTREAM LP - ENTERPRISE	O&G	145.1	159.9	139.3
24	THERMO COGEN PARTNERSHIP - JM SHAFER	PowerPlant	100.4	275.5	18.3
25	DCP MIDSTREAM, LP - MARLA	O&G	211.5	183.0	105.2
26	METAL CONTAINER CORP	Other Point	10.4	28.4	245.8
27	DCP MIDSTREAM, LP- LUCERNE	O&G	187.8	159.7	104.3
28	PHILLIPS 66 PIPELINE - DENVER TERMINAL	Other Point	36.2	14.3	215.6
29	EASTMAN KODAK CO	Other Point	26.0	87.4	123.6
30	COLORADO STATE UNIV CSU FACILITY SVCS	Other Point	124.5	199.4	8.4
31	PUBLIC SERVICE CO DENVER STEAM PLT	PowerPlant	51.8	172.5	3.4
32	CARESTREAM HEALTH, INC	Other Point	96.5	133.4	40.8
33	MAGELLAN PIPELINE CO.- DUPONT TERMINAL	Other Point	13.0	5.2	148.0
34	UNIV OF COLO - BOULDER BUFFALO POWER	Other Point	24.8	132.7	1.7
35	INTERTAPE POLYMER CORP (IPG)	Other Point	24.2	28.8	100.2
36	TEXAS IND (TXI) OPERATIONS DBA WESTERN A	Other Point	46.8	117.7	1.7
37	INTERNATIONAL BUSINESS MACHINES (IBM)	Other Point	55.8	107.5	4.0
		Totals [tons/year]:	**5,079**	**22,362**	**4,233**
		Totals [tons/day]:	**13.9**	**61.3**	**11.6**

APPENDIX

MOVES AND NON ROAD INPUTS

MOVES INPUTS:

Fuels (DRCOG is countyID 8001 and NFR is countyID 8069)

Fuel Supply

County ID	Fuel Year ID	Month Group ID	Fuel Formulation ID	Market Share	Market Share CV
8001	2011	7	8440	0.055525	0.5
8001	2011	7	3042	0.944475	0.5
8001	2011	7	20011	1	0.5
8069	2011	7	8991	0.142857	0.5
8069	2011	7	3614	0.857143	0.5
8069	2011	7	20011	1	0.5

Fuel Formulation

Fuel Formulation ID	Fuel Subtype ID	RVP	Sulfur Level
8440	10	8.21429	30
3042	12	8.21429	30
3614	12	9.47857	30
20011	20	0	11

Meteorology Inputs

DRCOG

monthID	zoneID	hourID	temperature	relHumidity
7	80010	1	63.6	57.6
7	80010	2	62.1	59.9
7	80010	3	60.6	61.7
7	80010	4	59.1	64.1
7	80010	5	57.8	65.9
7	80010	6	56.9	67.1
7	80010	7	60	63
7	80010	8	65.3	55.3
7	80010	9	70.5	48.2
7	80010	10	75.2	42.2
7	80010	11	79.7	36.5

7	80010	12	83.3	32.1
7	80010	13	85.9	28.9
7	80010	14	87.3	27.2
7	80010	15	88.1	26.5
7	80010	16	87.3	26.7
7	80010	17	86.1	28
7	80010	18	84.2	29.8
7	80010	19	81.4	33.2
7	80010	20	77.4	37.8
7	80010	21	72.8	43.8
7	80010	22	69.8	48.1
7	80010	23	67.5	51.8
7	80010	24	65.6	54.8

NFR

monthID	zoneID	hourID	temperature	relHumidity
7	80690	1	59.4	61.8
7	80690	2	57.8	64.4
7	80690	3	56.5	66.3
7	80690	4	55.2	67.9
7	80690	5	54.2	69.1
7	80690	6	53.5	70.1
7	80690	7	56.2	66.5
7	80690	8	61.8	58.7
7	80690	9	67.3	50.3
7	80690	10	71.9	43.5
7	80690	11	75.7	38.3
7	80690	12	78.8	34.4
7	80690	13	81.1	31.4
7	80690	14	82.5	29.8
7	80690	15	83.1	29
7	80690	16	82.7	29.2
7	80690	17	81.7	30
7	80690	18	80.1	31.9
7	80690	19	77.4	35.1
7	80690	20	73.5	40.3
7	80690	21	68.7	46.9
7	80690	22	65.5	51.9
7	80690	23	63.1	55.9
7	80690	24	61.3	58.8

DRCOG Counties I/M Inputs (Except Weld County—Weld and Larimer Counties were modeled with no I/M)

polProcessID	stateID	countyID	yearID	sourceTypeID	fuelTypeID	IMProgramID	begModelYearID	endModelYearID	inspectFreq	testStandardsID	useIMyn	complianceFactor
101	8	8001	2011	21	1	1	1968	1981	1	11	Y	96.3
101	8	8001	2011	31	1	1	1968	1981	1	11	Y	90.53
101	8	8001	2011	32	1	1	1968	1981	1	11	Y	84.75
102	8	8001	2011	21	1	1	1968	1981	1	11	Y	96.3
102	8	8001	2011	31	1	1	1968	1981	1	11	Y	90.53
102	8	8001	2011	32	1	1	1968	1981	1	11	Y	84.75
201	8	8001	2011	21	1	1	1968	1981	1	11	Y	96.3
201	8	8001	2011	31	1	1	1968	1981	1	11	Y	90.53
201	8	8001	2011	32	1	1	1968	1981	1	11	Y	84.75
202	8	8001	2011	21	1	1	1968	1981	1	11	Y	96.3
202	8	8001	2011	31	1	1	1968	1981	1	11	Y	90.53
202	8	8001	2011	32	1	1	1968	1981	1	11	Y	84.75
101	8	8001	2011	21	1	3	1982	2007	2	33	Y	96.3
101	8	8001	2011	31	1	3	1982	2007	2	33	Y	90.53
101	8	8001	2011	32	1	3	1982	2007	2	33	Y	84.75
102	8	8001	2011	21	1	3	1982	2007	2	33	Y	96.3
102	8	8001	2011	31	1	3	1982	2007	2	33	Y	90.53
102	8	8001	2011	32	1	3	1982	2007	2	33	Y	84.75
201	8	8001	2011	21	1	3	1982	2007	2	33	Y	96.3
201	8	8001	2011	31	1	3	1982	2007	2	33	Y	90.53
201	8	8001	2011	32	1	3	1982	2007	2	33	Y	84.75
202	8	8001	2011	21	1	3	1982	2007	2	33	Y	96.3
202	8	8001	2011	31	1	3	1982	2007	2	33	Y	90.53
202	8	8001	2011	32	1	3	1982	2007	2	33	Y	84.75
301	8	8001	2011	21	1	3	1982	2007	2	33	Y	96.3
301	8	8001	2011	31	1	3	1982	2007	2	33	Y	90.53
301	8	8001	2011	32	1	3	1982	2007	2	33	Y	84.75
302	8	8001	2011	21	1	3	1982	2007	2	33	Y	96.3
302	8	8001	2011	31	1	3	1982	2007	2	33	Y	90.53
302	8	8001	2011	32	1	3	1982	2007	2	33	Y	84.75
112	8	8001	2011	21	1	4	1975	2007	2	41	Y	96.3
112	8	8001	2011	31	1	4	1975	2007	2	41	Y	90.53
112	8	8001	2011	32	1	4	1975	2007	2	41	Y	84.75
113	8	8001	2011	21	1	4	1975	2007	2	41	Y	96.3
113	8	8001	2011	31	1	4	1975	2007	2	41	Y	90.53
113	8	8001	2011	32	1	4	1975	2007	2	41	Y	84.75

NON ROAD INPUTS:

Written by Nonroad interface at 8/24/2010 1:31:01 PM
This is the options file for the NONROAD program.
The data is sperated into "packets" bases on common
information. Each packet is specified by an
identifier and a terminator. Any notes or descriptions
can be placed between the data packets.

9/2005 epa: Add growth & tech years to OPTIONS packet
and Counties & Retrofit files to RUNFILES packet.

PERIOD PACKET

This is the packet that defines the period for
which emissions are to be estimated. The order of the
records matter. The selection of certain parameters
will cause some of the record that follow to be ignored.
The order of the records is as follows:

1 - Char 10 - Period type for this simulation.
Valid responses are: ANNUAL, SEASONAL, and MONTHLY
2 - Char 10 - Type of inventory produced.
Valid responses are: TYPICAL DAY and PERIOD TOTAL
3 - Integer - year of episode (4 digit year)
4 - Char 10 - Month of episode (use complete name of month)
5 - Char 10 - Type of day
Valid responses are: WEEKDAY and WEEKEND

/PERIOD/
Period type : Seasonal
Summation type : Typical day
Year of episode : 2011
Season of year : Summer
Month of year :
Weekday or weekend : Weekday
Year of growth calc:
Year of tech sel :
/END/

OPTIONS PACKET

This is the packet that defines some of the user
options that drive the model. Most parameters are
used to make episode specific emission factor
adjustments. The order of the records is fixed.
The order is as follows.

1 - Char 80 - First title on reports
2 - Char 80 - Second title on reports
3 - Real 10 - Fuel RVP of gasoline for this simulation
4 - Real 10 - Oxygen weight percent of gasoline for simulation
5 - Real 10 - Percent sulfur for gasoline
6 - Real 10 - Percent sulfur for diesel
7 - Real 10 - Percent sulfur for LPG/CNG
8 - Real 10 - Minimum daily temperature (deg. F)
9 - Real 10 - maximum daily temperature (deg. F)
10 - Real 10 - Representative average daily temperature (deg. F)
11 - Char 10 - Flag to determine if region is high altitude
Valid responses are: HIGH and LOW
12 - Char 10 - Flag to determine if RFG adjustments are made
Valid responses are: YES and NO

/OPTIONS/
Title 1 : 2011 NAA
Title 2 : 8.5RVP
Fuel RVP for gas : 8.5
Oxygen Weight % : 2.3688
Gas sulfur % : 0.0030
Diesel sulfur % : .0011
Marine Dsl sulfur %: .0050
CNG/LPG sulfur % : 0.003
Minimum temper. (F): 58.0
Maximum temper. (F): 91.0
Average temper. (F): 77.3
Altitude of region : LOW
EtOH Blend % Mkt : 1.00
EtOH Vol % : 9.4
/END/

REGION PACKET

This is the packet that defines the region for which
emissions are to be estimated.

The first record tells the type of region and allocation to perform.

Valid responses are:

US TOTAL - emissions are for entire USA without state breakout.

50STATE - emissions are for all 50 states and Washington D.C., by state.

STATE - emissions are for a select group of states and are state-level estimates

COUNTY - emissions are for a select group of counties and are county level estimates. If necessary, allocation from state to county will be performed.

SUBCOUNTY - emissions are for the specified sub counties and are subcounty level estimates. If necessary, county to subcounty allocation will be performed.

The remaining records define the regions to be included. The type of data which must be specified depends on the region level.

US TOTAL - Nothing needs to be specified. The FIPS code 00000 is used automatically.

50STATE - Nothing needs to be specified. The FIPS code 00000 is used automatically.

STATE - state FIPS codes

COUNTY - state or county FIPS codes. State FIPS code means include all counties in the state.

SUBCOUNTY - county FIPS code and subregion code.

/REGION/
Region Level : COUNTY
: 08001
: 08005
: 08013
: 08014
: 08031

: 08035
: 08059
: 08069
: 08123
/END/

or use -
Region Level : STATE
Michigan : 26000

SOURCE CATEGORY PACKET

This packet is used to tell the model which source
categories are to be processed. It is optional.
If used, only those source categories list will
appear in the output data file. If the packet is
not found, the model will process all source
categories in the population files.

Diesel Only -
:2270000000
:2282020000
:2285002015
Spark Ignition Only -
:2260000000
:2265000000
:2267000000
:2268000000
:2282005010
:2282005015
:2282010005
:2285004015
:2285006015

This is the packet that lists the names of output files
and some of the input data files read by the model. If
a drive:\path\ is not given, the location of the
NONROAD.EXE file itself is assumed. You will probably
want to change the names of the Output and Message files
to match that of the OPTion file, e.g., MICH-97.OPT,
MICH-97.OUT, MICH-97.MSG, and if used MICH-97.AMS.

/RUNFILES/

ALLOC XREF : data\allocate\allocate.xrf
ACTIVITY : data\activity\activity.dat
EXH TECHNOLOGY : data\tech\tech-exh.dat
EVP TECHNOLOGY : data\tech\tech-evp.dat
SEASONALITY : data\season\season.dat
REGIONS : data\season\season.dat
MESSAGE : c:\nonroad\outputs\15rc78no.msg
OUTPUT DATA : c:\nonroad\outputs\15rc78no.out
EPS2 AMS :
US COUNTIES FIPS : data\allocate\fips.dat
RETROFIT :
/END/

This is the packet that defines the equipment population
files read by the model.

/POP FILES/
Population File :c:\nonroad\data\pop\co.pop
/END/

POPULATION FILE : c:\nonroad\data\POP\MI.POP

This is the packet that defines the growth files
files read by the model.

/GROWTH FILES/
National defaults : data\growth\nation.grw
/END/

/ALLOC FILES/
Air trans. empl. :c:\nonroad\data\allocate\co_airtr.alo
Undergrnd coal prod:c:\nonroad\data\allocate\co_coal.alo
Construction cost :c:\nonroad\data\allocate\co_const.alo
Harvested acres :c:\nonroad\data\allocate\co_farms.alo
Golf course estab. :c:\nonroad\data\allocate\co_golf.alo
Wholesale estab. :c:\nonroad\data\allocate\co_holsl.alo
Family housing :c:\nonroad\data\allocate\co_house.alo
Logging employees :c:\nonroad\data\allocate\co_loggn.alo
Landscaping empl. :c:\nonroad\data\allocate\co_lscap.alo
Manufacturing empl.:c:\nonroad\data\allocate\co_mnfg.alo
Oil & gas employees:c:\nonroad\data\allocate\co_oil.alo
Allocation File :c:\nonroad\data\allocate\co_oil.alo

Census population :c:\nonroad\data\allocate\co_pop.alo
Allocation File   :c:\nonroad\data\allocate\co_rail.alo
RV Park establish. :c:\nonroad\data\allocate\co_rvprk.alo
Snowblowers comm. :c:\nonroad\data\allocate\co_sbc.alo
Snowblowers res.   :c:\nonroad\data\allocate\co_sbr.alo
Snowmobiles   :c:\nonroad\data\allocate\co_snowm.alo
Rec marine inboard :c:\nonroad\data\allocate\co_wib.alo
Rec marine outboard:c:\nonroad\data\allocate\co_wob.alo
/END/

This is the packet that defines the emssions factors
files read by the model.

/EMFAC FILES/
THC exhaust   : data\emsfac\exhthc.emf
CO exhaust   : data\emsfac\exhco.emf
NOX exhaust   : data\emsfac\exhnox.emf
PM exhaust   : data\emsfac\exhpm.emf
BSFC   : data\emsfac\bsfc.emf
Crankcase   : data\emsfac\crank.emf
Spillage   : data\emsfac\spillage.emf
Diurnal   : data\emsfac\evdiu.emf
Tank Perm   : data\emsfac\evtank.emf
Non-RM Hose Perm : data\emsfac\evhose.emf
RM Fill Neck Perm : data\emsfac\evneck.emf
RM Supply/Return : data\emsfac\evsupret.emf
RM Vent Perm   : data\emsfac\evvent.emf
Hot Soaks   : data\emsfac\evhotsk.emf
RuningLoss   : data\emsfac\evrunls.emf
/END/

This is the packet that defines the deterioration factors
files read by the model.

/DETERIORATE FILES/
THC exhaust   : data\detfac\exhthc.det
CO exhaust   : data\detfac\exhco.det
NOX exhaust   : data\detfac\exhnox.det
PM exhaust   : data\detfac\exhpm.det
Diurnal   : data\detfac\evdiu.det
/END/

Optional Packets - Add initial slash "/" to activate

/STAGE II/

Control Factor : 0.0
/END/
Enter percent control: 95 = 95% control = 0.05 x uncontrolled
Default should be zero control.

/MODELYEAR OUT/
EXHAUST BMY OUT :
EVAP BMY OUT :
/END/

SI REPORT/
SI report file-CSV :OUTPUTS\NRPOLLUT.CSV
/END/

/DAILY FILES/
DAILY TEMPS/RVP :
/END/

PM Base Sulfur
cols 1-10: dsl tech type;
11-20: base sulfur wt%; or '1.0' means no-adjust (cert= in-use)
/PM BASE SULFUR/
T2 0.2000 0.02247
T3 0.2000 0.02247
T3B 0.0500 0.02247
T4A 0.0500 0.02247
T4B 0.0015 0.02247
T4 0.0015 0.30
T4N 0.0015 0.30
/END/